



## Primary Aneurysm of Basilic Vein, A Rare Case Report

Dr. Zahid N Qureshi<sup>\*1</sup>, Dr. Dileep Kumar<sup>2</sup>, Dr. M Samir Elwan<sup>3</sup>

<sup>1,2</sup> Specialist Family Physician, Family Medicine dept, Hatta Hospital

<sup>3</sup> Senior Specialist in Charge Radiologist, Radiology dept, Hatta Hospital

### ABSTRACT

Published Online: March 29, 2023

When compared to arterial system, the venous aneurysm is a rare entity. Venous aneurysm (VA) is an uncommon solitary focal dilation of a vein and it could be primary or secondary. Primary superficial VA is rare, which may be associated with congenital weakness of the vein. In this case study, an extremely rare primary superficial VA of the basilic vein in the forearm is reported. A young girl presented with a painless soft mass in the ulnar aspect of the upper left forearm without any history of trauma, inflammation, or systematic disease. The mass was prominent with the arm in dependence and diminished when the arm elevated. Ultrasound scanning revealed a well-defined anechoic cystic structure along the path of the basilic vein with no arterial flow. Pulsed-wave Doppler confirmed the venous origin. The patient was advised to observe for the change with no need for surgery or any intervention at the time.

### KEYWORDS:

Venous aneurysm (VA), Primary Superficial, Basilic Vein.

### INTRODUCTION

Venous aneurysms in comparison to arterial are rare vascular disorders which have been described throughout the venous system and can be seen at any age.<sup>1,2</sup> The lower extremities veins are the most frequently affected. The popliteal vein being the most common site, followed by aneurysms of the neck, abdominal veins, thoracic veins. It is uncommon in upper extremities. VA should not be part of a varicose vein or have any relationship with an arteriovenous fistula.<sup>3</sup>

Venous aneurysm can be classified into superficial and deep based on the involved vein and primary or secondary based on the etiology.<sup>4</sup> Primary VA refers to the pathogenesis associated with congenital weakness of the vein wall, whereas secondary refers to the pathogenesis associated with trauma, inflammation, degenerative change in the wall, or increased pressure in the vein.<sup>5</sup>

In this report, we present a rare case of primary superficial VA of left the basilic vein, located at the left forearm below cubital fossa. Literature search found few cases Basilic vein aneurysm being reported.<sup>6,7,8</sup>

### CASE REPORT

A 12-year-old girl presented to the Family medicine clinic with small painless swelling noted since about 2 months, localized on the ventral surface of the left forearm. Her recent medical history was unremarkable with no events of any trauma, puncture or any infectious process in the affected limb or any systemic disease. Physical examination revealed a soft 16 x 6 mm soft mass on the ulnar aspect of the left forearm. There was no skin colour change. On palpation It was non-tender, compressible and non-pulsatile. The mass was prominent with the arm in dependence and diminished in size when she elevated the arm. Ultrasound examination was requested.

### Colour Duplex Ultrasound

An ultrasound examination was performed using LOGIC E9 GE ultrasound machine with a linear high-frequency transducer (6–15 MHz) for near-field scanning. The patient's forearm was naturally laid on her side with the patient lying on the examination table. In the mass location, a well-defined partially compressible sac-like anechoic cystic structure seen in the subcutaneous tissue, that was focal dilatation of left basilic vein along the medial aspect of left mid forearm measuring 14x3 mm (image # 1). Doppler examination showed internal low velocity turbid wave form below 5cm/sec (image # 2) and eccentric peripheral echogenic structure of thickness about 1.5 mm was observed. The mass was partially compressed by the probe and extended

*Corresponding Author: Dr. Zahid N Qureshi*

*\*Cite this Article: Dr. Zahid N Qureshi, Dr. Dileep Kumar, Dr. M Samir Elwan (2023). Primary Aneurysm of Basilic Vein, A Rare Case Report. International Journal of Clinical Science and Medical Research, 3(3), 63-65*

## Dr. Zahid N Qureshi et al, Primary Aneurysm of Basilic Vein, A Rare Case Report

immediately when the compression was removed. There was no evidence of any deep venous aneurysm, thrombosis or deep intramuscular communication. Arterial Doppler ruled

out any arterio-venous communication and other arterial abnormalities.

Patient was referred to Vascular surgery for further needful.



Image # 1

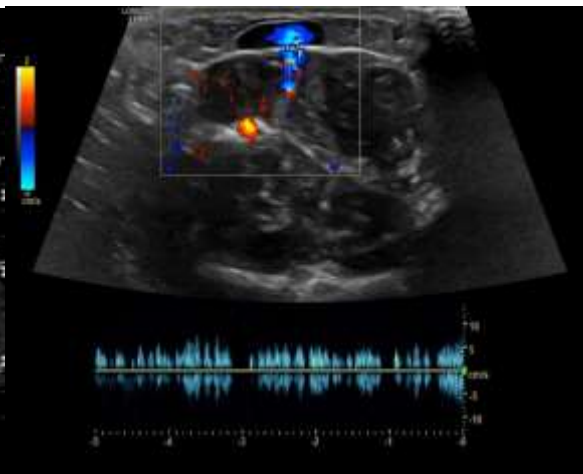


Image # 2

### DISCUSSION

Venous aneurysms are rare vascular disorders which have been described throughout the venous system and can be seen at any age.<sup>1,2</sup> The definition of venous aneurysm remains controversial, and there is no precise size criterion in the literature to distinguish between venous dilatation and venous aneurysm. According to the modified Hamburg classification of congenital venous malformations, venous aneurysms refer to truncular localized dilated lesions. An isolated focal dilation of a vein approximately two to three times its normal size had been proposed. VA are classified as superficial and deep, Primary or secondary on basis of its location and aetiology.

The primary type differs from secondary type in few other ways. Primary type occurs at any age including children, it can appear in various parts of the body, and it is found as a localized lesion of vein segment, which is not associated with prolongation of the affected vein.<sup>9,10</sup> Primary VA of the superficial venous system has no varicosities, bruit or pulsation and is usually painless, but pain and tenderness can often be caused by thrombosis.

Little clinical data regarding pathogenesis VA is available in the literature. Aetiology of primary type remains unknown. It is proposed they are a local degenerative process, flow-related phenomena which direct the vein in “outward” remodelling. However, Schatz and Fine<sup>11</sup> considered endophlebomyopathy, which means dilatation of vein wall followed by early hypertrophy, and congenital weakness or degenerative changes due to tissue alteration. Secondary VA refers to the pathogenesis associated with trauma, inflammation, degenerative change in the wall, or increased pressure in the vein<sup>5</sup>. Histopathological analysis shows thin vein wall with elastin fragmentation and degeneration alternates with smooth muscle cell attenuation and fibrous

tissue deposition, thus suggesting a typical response to vascular injury.<sup>3,12</sup>

Superficial VA of extremities are uncommon and in upper extremities are extremely rare. Because of its rarity and un familiar clinical entity; it can be easily misdiagnosed initially as subcutaneous soft-tissue tumours, lipoma, varicose veins, haemangiomas of infancy, venous malformations, arteriovenous malformations.<sup>13</sup>

Duplex ultrasonography is usually the first choice for vascular examination in diagnosing VA because it is non-invasive, inexpensive, easily repeatable, dynamic, and without ionizing radiation. Furthermore, it is very reliable in detecting VA, which includes the site, size, the presence of a thrombus inside, and other coexisted vascular anomalies. The duplex scanning of the current case provided excellent assessment of the aneurysm size, anatomic relationship with the basilic vein, and even the very slow blood swirling inside the aneurysm. The typical appearance of a VA is a well-defined anechoic subcutaneous structure, which is continuous with a superficial vein, can be easily compressed with pressure applied to the transducer, and extended immediately with pressure removed. (as seen in our case). These characteristics can differentiate it easily from venous malformation, which appears as well-circumscribed, sponge-like vascular spaces or as poorly marginated collections of veins. Computed tomography (CT) or magnetic resonance imaging (MRI) scans are further choices for diagnosing VA. They are used when a more accurate VA size, imaging the venous anatomy, and the deep venous system assessment are needed before surgery if indicated.

The management of asymptomatic superficial VA remains controversial. The natural history of these primary VA is benign. Although rare, the complications, such as pulmonary embolism, aneurysm rupture, or thrombosis, have been reported.<sup>4,5,14</sup>. Surgery is considered on large VA, presence of

## Dr. Zahid N Qureshi et al, Primary Aneurysm of Basilic Vein, A Rare Case Report

thrombus, rupture or pressure symptoms and usually is well managed by simple ligation and excision.<sup>10,11,15</sup> The most common procedure is tangential excision with lateral suture as described by Aldridge.<sup>16</sup> The endoluminal laser, endovenous radiofrequency energy or sclerotherapy can also be used.<sup>17,18</sup>

In asymptomatic superficial primary small VA of extremity with no cosmetic demand, observation and regular follow-up with ultrasonography may be advised as occurred and was suggested by vascular surgeon in the current case.

### CONCLUSION

Primary superficial VA of basilic vein at the forearm is a rare entity. It should be included in differential diagnosis of cutaneous masses. Because of its rarity it is frequently misdiagnosed at primary diagnosis. The current case has characteristics of superficial VA with unique location and unremarkable history. Duplex sonography plays an important role in differentiating it from other soft tissue masses.

### Statement of Ethics

As per DHA protocol to report this case, Ethical approval from the Medical Education and Research Department and the department head permission was obtained. The author certifies that all appropriate patient consent form was obtained. In the form, the patient (next of kin) has given her consent for the images and other clinical information to be reported in the journal and understands that her name and initials will not be published.

### Conflict of Interest Statement

No conflict of interest

### Funding Sources

None

### Data Availability Statement

All data or images generated during this case report are included in this article. Any further enquiries can be directed to the corresponding author

### REFERENCES

1. Schild H, Berg ST, Weber W, Schmied W, Steegmuller KW. The venous aneurysm. *Das Veneaneurysma. Aktuelle Radiol.* 1992; 2:75-80.
2. Calligaro KD, Ahmad S, Dandora R, Dougherty MJ, Savarese RP, Doerr KJ, et al. Venous aneurysms: surgical indications and review of the literature. *Surgery.* 1995; 117:1-6.
3. Gillespie D L, Villavicencio J L, Gallagher C, Chang A, Hamelink J K, Fiala L A, et al. Presentation and management of venous aneurysms. *J Vasc Surg* 1997;26(5):845-852.
4. Lee HY, Lee W, Cho YK, Park JH. Superficial venous aneurysm: reports of 3 cases and literature review. *J Ultrasound Med.* 2006; 25:771-776.
5. Seo SH, Kim MB, Kwon KS, Kim CW, Oh CK. Primary venous aneurysms of the superficial venous system. *Angiology* 2008;59(5):593-598
6. Katsoulis IE, Jader S, Bradpiece HA: Primary aneurysm of the basilic vein. *Surgeon* 2003; 1:299-301.
7. Maksimovic Z, Milic D, Havelka-Djukovic M, tatic S. Primary aneurysms of cephalic and basilic veins—a report of two cases. *Phlebology* 2003;18(2):100.
8. Yaylak F, Ozbek O, Toker S, Algin C, Ozveren O, Erbilien E. Multiple basilic vein aneurysms concomitant with multiple haemangiomas of the upper extremity: a case report. *Int J Angiol* 2007;16(3):106-108
9. Al-Shaikhi A, Kay S, Laberge JM. External jugular venous aneurysm: an unusual cause of a neck mass in a young child. *J Pediatr Surg.* 2003; 38:1557-1559.
10. Tahata T, Kusuhara K, Johno H, Okamoto K. Venous aneurysms of the upper extremity: a case report. *Angiology.* 2002; 53:479-481
11. Schatz IJ, Fine G. Venous aneurysms. *N Engl J Med* 1962; 266:1310-1312.
12. Winchester D, Pearce WH, McCarthy WJ, McGee GS, Yao JST. Popliteal venous aneurysms. *Surgery* 114:600-607
13. Majeski J. Surgical repair of primary saphenous vein aneurysm of the proximal leg after initial presentation as an inguinal hernia. *Am Surg.* 2002; 68:999-1002.
14. Gabrielli R, Rosati MS, Siani A, Iraci L. Management of symptomatic venous aneurysm. *Sci World J* 2012; 2012:6
15. Friedman SG, Krishnasastri KV, Doscher W, Deckoff SL. Primary venous aneurysms. *Surgery.* 1990; 108:92-95.
16. Aldridge SC, Comerota AJ, Katz ML, Wolk JH, Goldman BI, White JV. Popliteal venous aneurysm: report of two cases and review of the world literature. *J Vasc Surg.* 1993; 18:708-715
17. Rabe E, Rabe P. Venous aneurysms in the foot region. *Z Hautkr.* 1990; 65:757-758.
18. Pascarella L, Al-Tuwaijri M, Bergan JJ, Mekenas LM. Lower extremity superficial venous aneurysms. *Ann Vasc Surg.* 2005; 19:69-73